

The Human Population: Growth, Demography, and Carrying Capacity

**G. Tyler Miller's
Living in the Environment
12th Edition**

Chapter 11

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Key Concepts

- **Factors affecting human population size**
- **Human population problems**
- **Managing population growth**

Factors Affecting Human Population Size

➤ Population change equation

$$\text{Population Change} = (\text{Births} + \text{Immigration}) - (\text{Deaths} + \text{Emigration})$$

➤ Zero population growth (ZPG)

➤ Crude birth rate (BR)

➤ Crude death rate (DR)

Refer to Fig. 11-2 p. 239

Natural Rate of Increase

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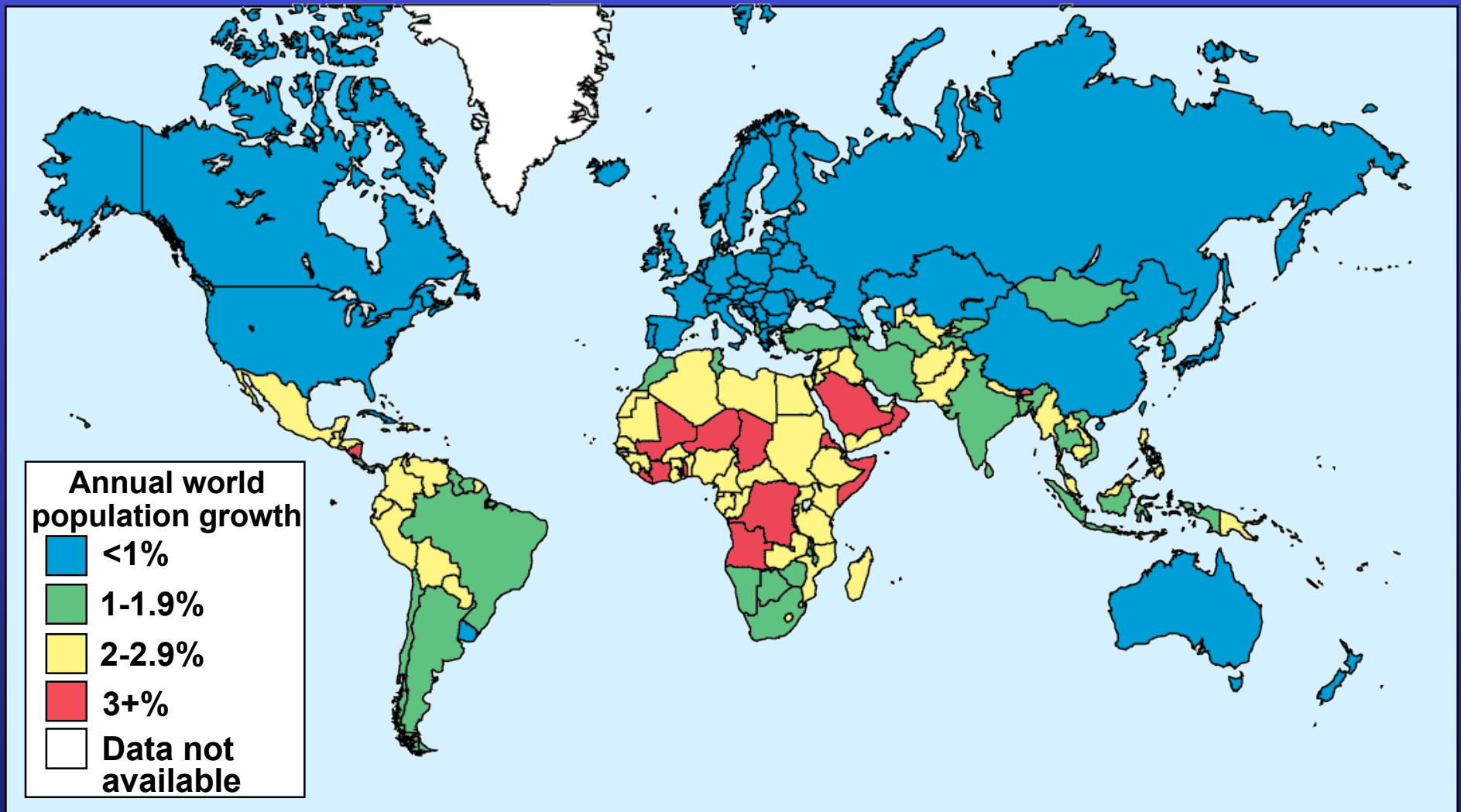
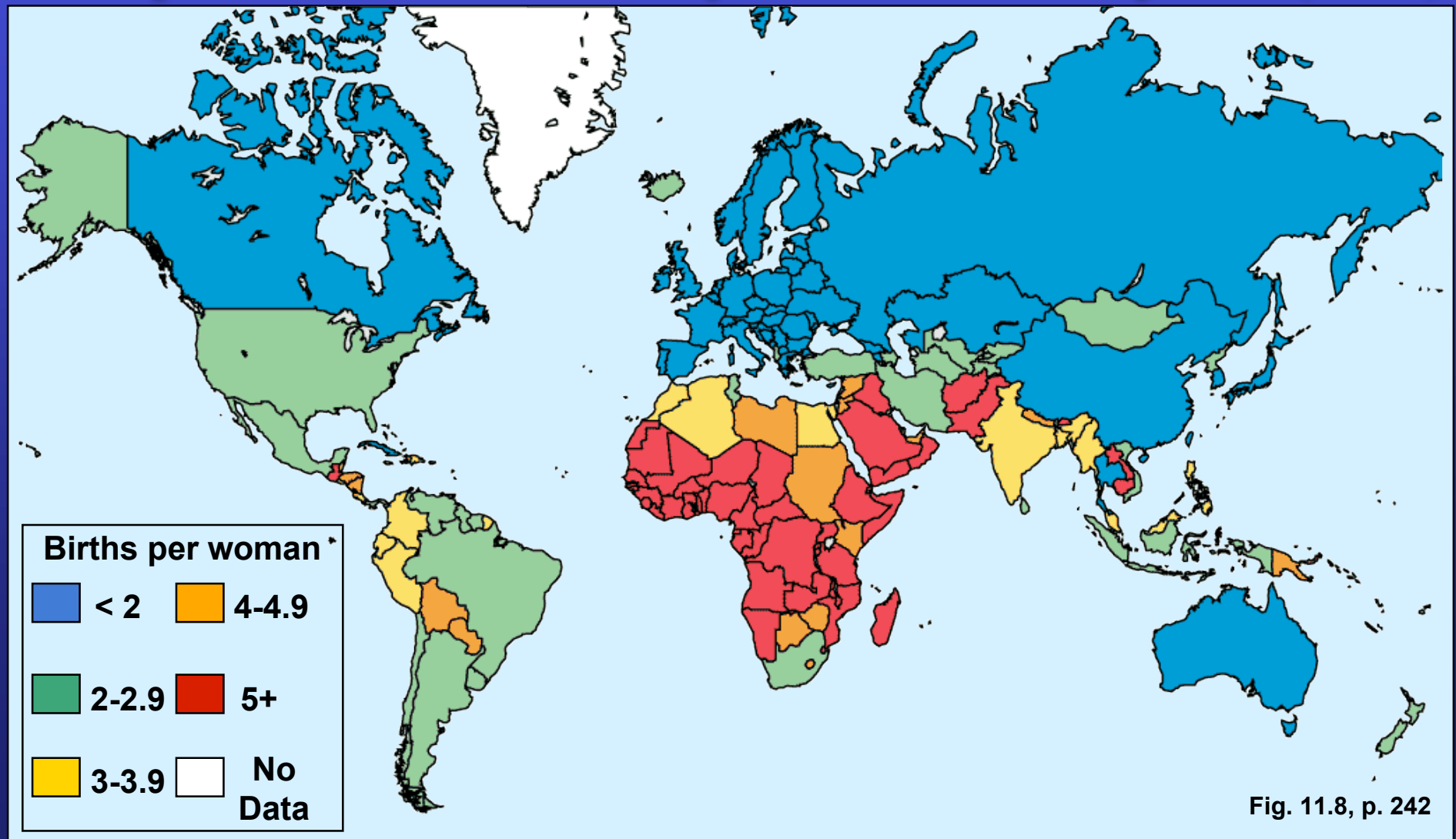


Fig. 11.3, p. 240

Fertility Rates

➤ Replacement-level fertility ➤ Total fertility rate (TFR)



Factors Affecting BR and TFR

- See bulleted list in text p. 243
- US BR's and TFR's

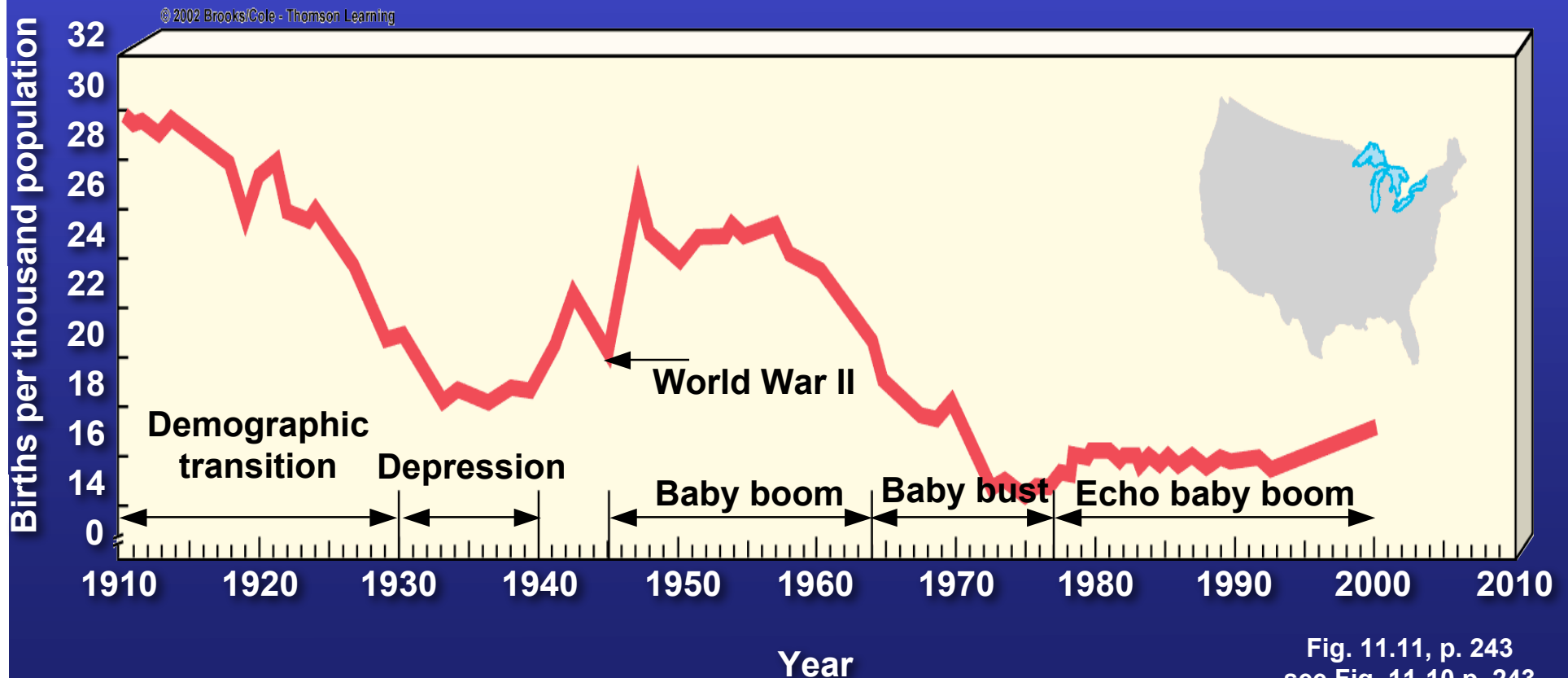
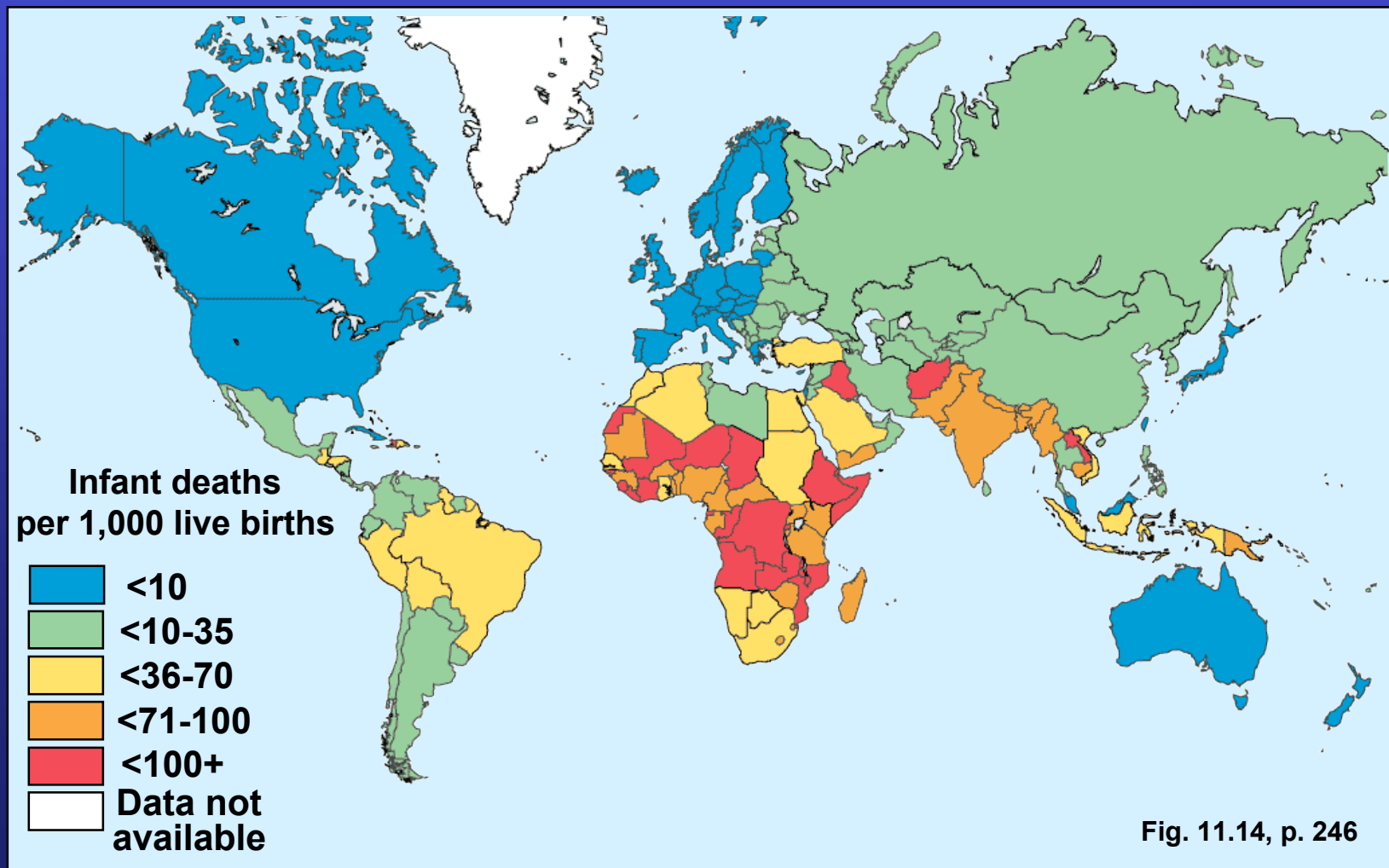


Fig. 11.11, p. 243
see Fig. 11-10 p. 243

Factors Affecting DR

- Life expectancy
- Infant mortality rate (IMR)



Factors Affecting Natural Rate of Increase

Rate of natural increase = crude birth rate - crude death rate

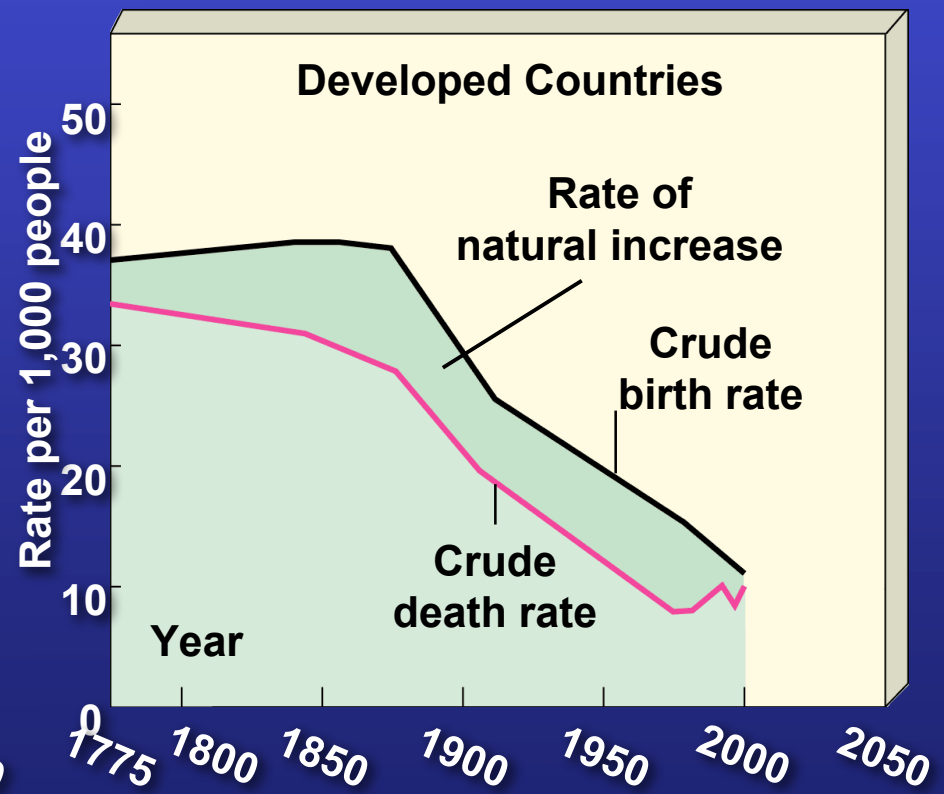
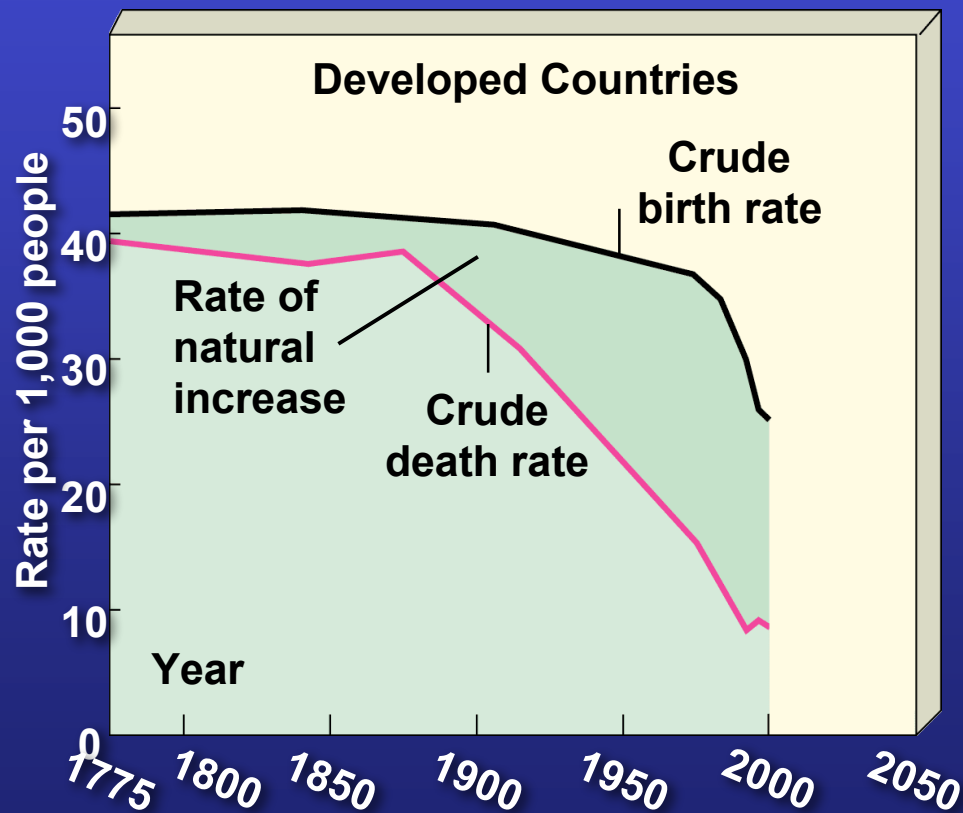


Fig. 11.13, p. 245

Population Age Structure

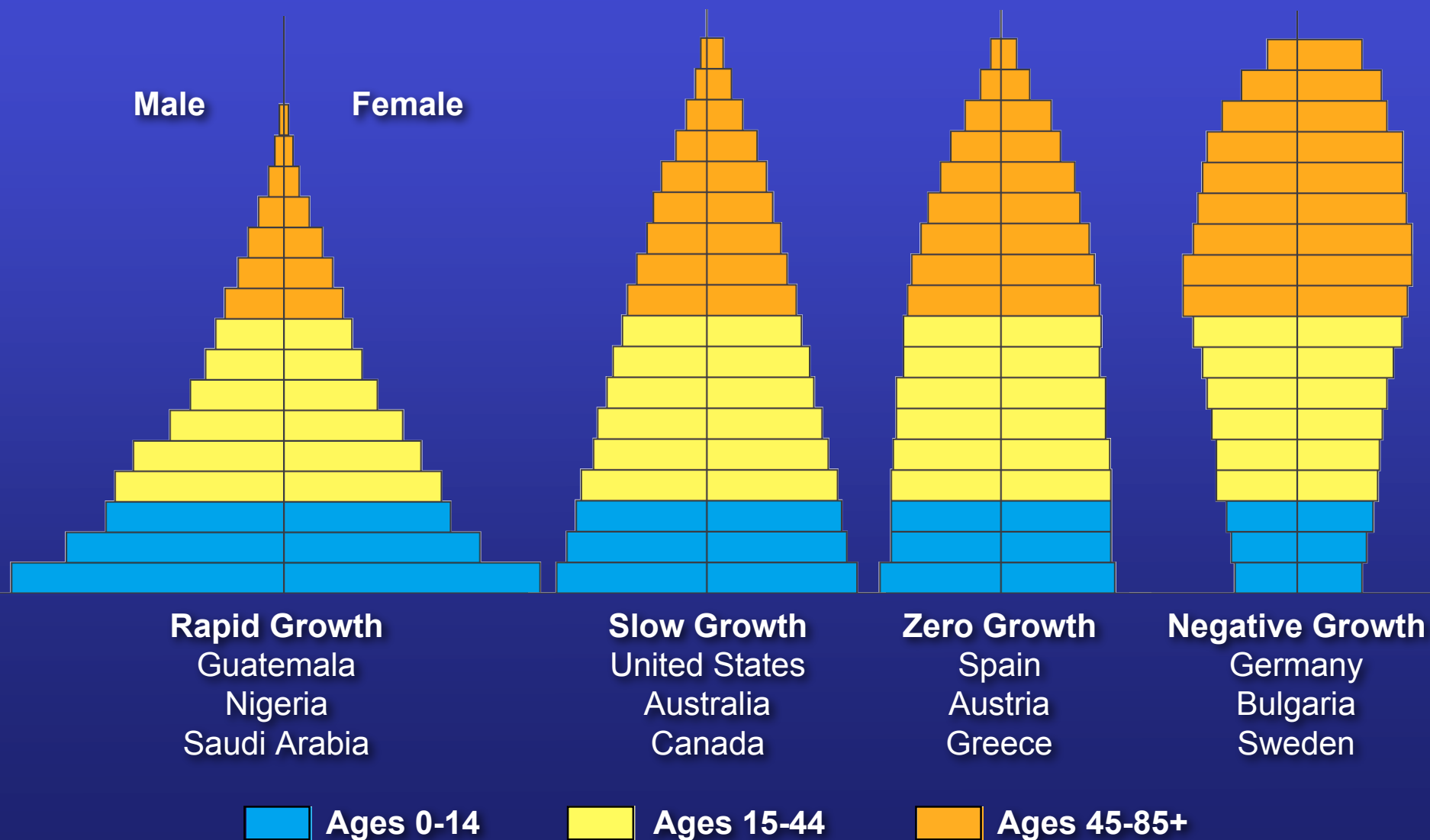


Fig. 11.16a, p. 247

Solutions: Influencing Population Size

- **Migration**
- **Environmental refugees**
- **Reducing births**
- **Family planning**
- **Empowerment of women**
- **Economic rewards and penalties**

The Demographic Transition

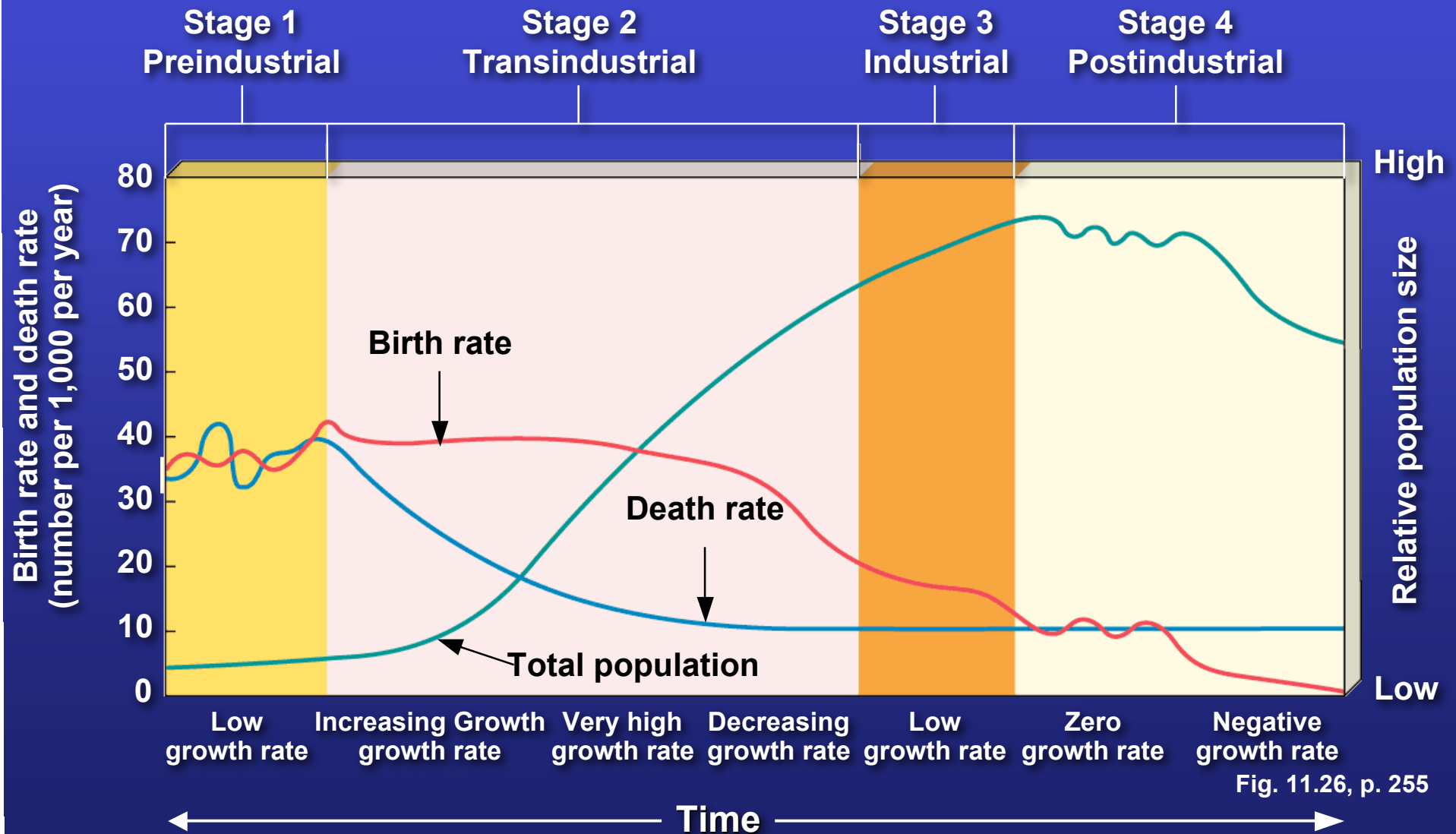


Fig. 11.26, p. 255

Case Study: Slowing Population Growth in India

Generally disappointing results:

- **Poor planning**
- **Bureaucratic inefficiency**
- **Low status of women**
- **Extreme poverty**
- **Lack of support**

Case Study: Slowing Population Growth in China

Generally positive results:

- **Economic incentives**
- **Free medical care**
- **Preferential treatment**
- **Intrusive and coercive**
- **Locally administered**

Cutting Global Population Growth

- **Family planning**
- **Reduce poverty**
- **Elevate the status of women**